

ABSTRACT OF THE DISCLOSURE

The invention provides a memory device including a memory substrate, an insulating layer, a shielding metal layer, a second dielectric layer and a second metal layer. The memory substrate includes a substrate, a memory cell area, a peripheral circuit area, a first dielectric layer and a first metal layer. The first dielectric layer is formed on the memory area and the peripheral circuit area, which are formed on the substrate. The first metal layer is formed on the first dielectric layer while the insulating layer is formed on the first dielectric layer not covered with the first metal layer. The shielding metal layer is formed on the insulating layer over the memory cell area. The second dielectric layer is formed on the shielding metal layer, the insulating layer not covered with the shielding metal layer and the first metal layer not covered with both the shielding layer and the insulating layer. The second metal layer is formed on the second dielectric layer.